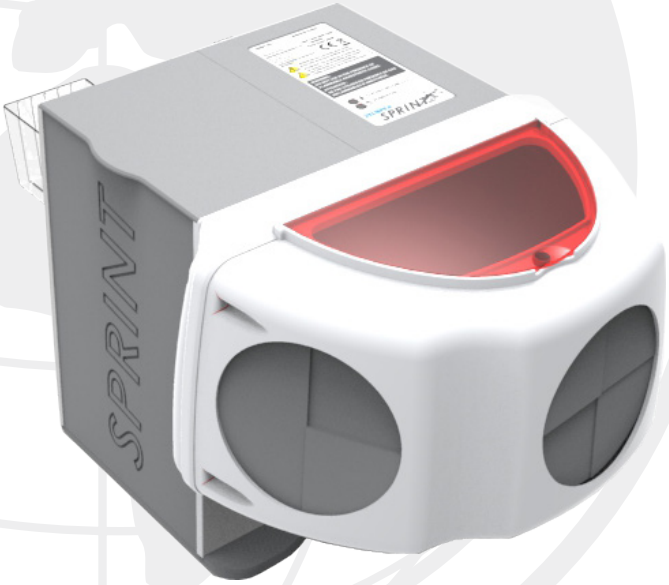
VELOPEX® Automatic X-Ray Film Processor

SPRINT MK6

USER GUIDE

Operation and Maintenance Manual



MODEL

Heated **MK6**

Un-heated **MK6-E**

WARNING:
Do not plug into the electrical mains power supply before reading this manual - or before filling the machine with liquids

Register your machine by returning the Warranty Card to enable full customer support.

CE

Machine serial number to be quoted on all correspondence:

VELOPEX® INTERNATIONAL
www.velopex.com

Hi-Tech Diagnostics Service

I/LIT2066P SPRINT Manual English Iss.2
Issued: 28/09/12

MAKERS OF DENTAL, VETERINARY AND MEDICAL EQUIPMENT

Introduction

Thank you for purchasing your automatic film processor from Velopex - we certainly appreciate your business.

The Velopex "Sprint" X-Ray Processor is a machine for developing and fixing dental x-ray films without user contact between insertion of the exposed film and receipt of the developed film into the wash-tank for collection at the end of the process.

In order to maintain the quality of our product and your processing it is important that you pay close attention to the instructions contained in this user manual. This will ensure a long life for your processor.

The processor could be dangerous if incorrectly installed or maintained outside the guidelines set out in this manual and the warranty will be voided.

There are no operator serviceable parts inside the machine . This equipment can only be serviced by technically qualified engineers, trained on Velopex machines, and is not designed to be serviced by the end user other than as specified in this manual.

Note: Panel and Label colours and designs may vary.

Contact Us...

Medivance Instruments Ltd.
Barretts Green Road
Harlesden
London NW10 7AP
United Kingdom
Tel: +44 (0)20 8965 2913
Fax: +44 (0)20 8963 1270
www.velopex.com

Velopex International
14 route de Montreuil le Gast
B.P. 82214, Melesse
35522 La Mézière
France
Tel: +33 (0) 2.99.13.22.59
Fax: +33 (0) 2.99.13.22.60
www.velopex.fr

Velopex International Inc.
105 East 17th Street
St Cloud
Florida, 34769
United States of America
Tel: +1 (407) 957 3900
Fax: +1 (407) 957 3927
www.velopexusa.com

Contents

5 **Your Velopex Sprint**
5 Table of Symbols
6 Velopex Sprint - Exterior
7 Velopex Sprint - Interior
8 Specifications

9 **Installation**
9 Pre-Installation Instructions
10 Daylight Loader Installation
12 Filling Chemical Modules

14 **Operation**
14 Processor Operation

16 **Maintenance**
16 Maintaining the Velopex Sprint

19 **Trouble Shooting**
21 Module diagram
22 Spare Parts / Consumables

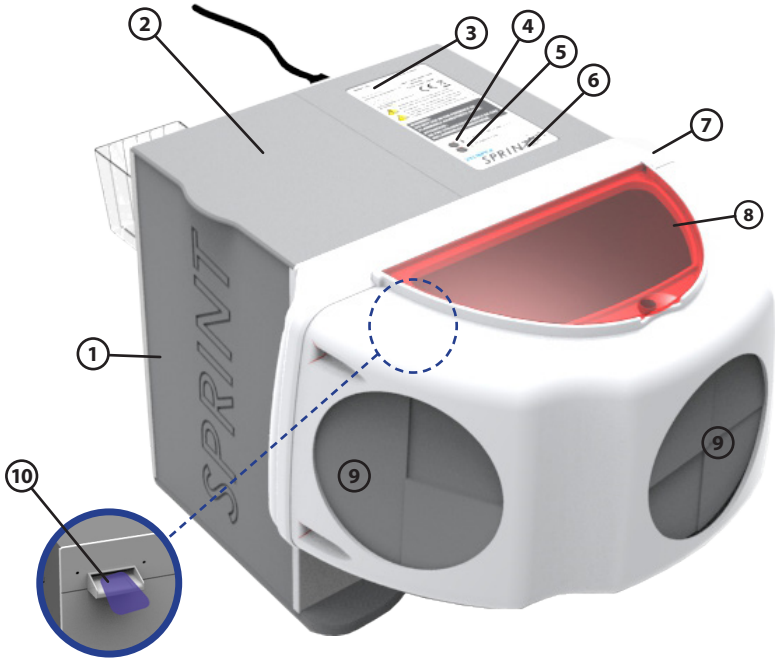
Table of Symbols

Symbol	Description
	Alternating Current
	Off
	On
	Attention / Warning - Refer to Manual
	Attention / Warning - High Voltage
	Caution - Hot Surface

Symbols used within Manual

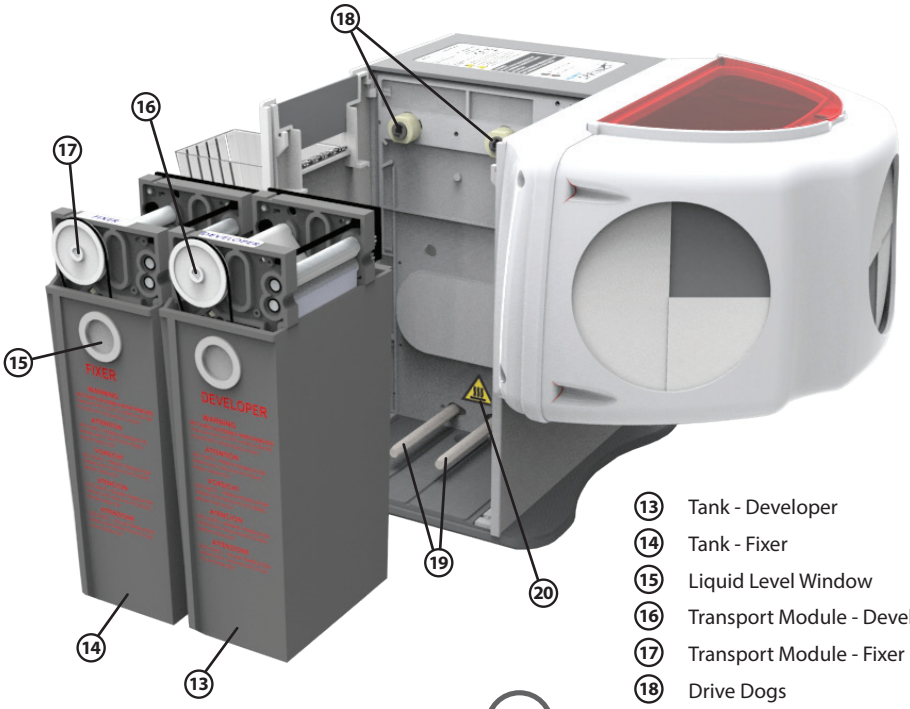
	Tip
	Attention / Warning
	Bleep / Attention Signal
	Attention / Biohazard
	Touch to Operate
	Section Refers to Mk6 Model
	Section Refers to Mk6-E Model

Velopex Sprint - Exterior



1. Left Side Panel
2. Module Lid
3. Serial Number
4. Temperature Indicator — *MK6*
5. On / Off Indicator
6. Machine Model Number
7. Daylight Loader
8. Daylight Loader Viewing Hatch
9. Hand Entry Port / Glove
10. Film Entry Guide
11. Power Socket
12. Wash Tank

Velopex Sprint - Interior

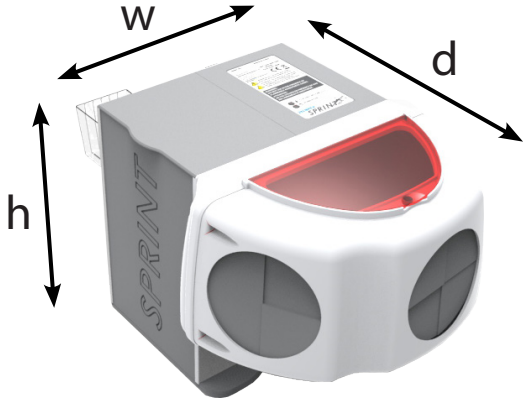


13 Tank - Developer
14 Tank - Fixer
15 Liquid Level Window
16 Transport Module - Developer
17 Transport Module - Fixer
18 Drive Dogs
MK6 → 19 Heater Element
20 Hot Warning Label

Machine Accessories and Extras Supplied

21 Silicone Grease
22 Cleaning Brush
23 Turning Tool
24 Chemical Change Record Sheet
25 UK - Electricity Supply Cord
or 26 USA - Electricity Supply Cord
or 27 Continental - Electricity Supply Cord

Specifications



Dimensions	
Width (w)	330mm / 13”
Height (h)	310mm / 12”
Depth (d)	430mm / 17”

Weight	
Empty Tanks	4kg / 8lb 13oz
Full Tanks	6kg / 13lbs 4oz

Tank Capacity	1.4 Litres / 2.5 Imp pints each
Voltage	220-240V, 110-120V (50/60Hz)
Max Film Width	65mm / 2.5”
Environmental Conditions	Indoor use only
Maximum Relative Humidity	80%

	MK6	MK6-E
Chemical Temp	27°C / 80°F	12°C - 27°C / 54°F- 80°F

Pre-Installation Instructions

Pre-installation instructions

When using the machine in daylight or a darkroom, avoid sources of intense light. Do not mount the unit under a window, fluorescent light or flood lamp.

IMPORTANT NOTE: A well ventilated position is mandatory.

The SPRINT has been designed for use on a normal counter-top. It is important that when the machine is filled with solution the stand does not rock or shake, as this could cause spillage. Never move the machine with chemicals in the tanks. Avoid siting the machine above or near other electrical, mechanical or sensitive apparatus - e.g. autoclave, compressor, evacuation equipment. The machine should not be placed in areas exposed to flammable gases.

Electrical Supply

The power source must be within one metre (3 feet) of the machine. It should be easily accessible for day to day operation.

Preparing to use the Velopex Sprint

1. Familiarise yourself with the layout of the machine by referring to illustrations at the front of this manual.

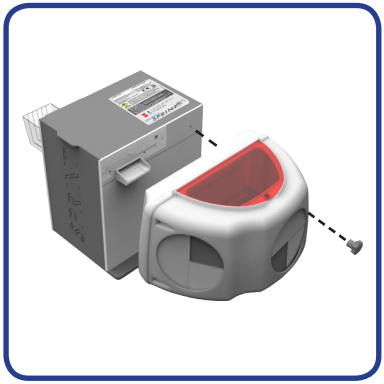
2. Remove the water tank and processor accessory bag that are stored inside the daylight loader. Entry into the Daylight Loader is made by opening the Daylight Loader viewing hatch.

3. When the machine has been unpacked and is in position, the inner packaging must be removed. The transport modules inside are protected by internal packing pieces. Open the Module Lid and discard the packaging along with the separating sheet between the output rollers of both modules.

Installing the Daylight Loader

1. Unscrew the two retaining screws and keep in a safe place. Remove white protective strip from sealing material on the back of the loader.

2. Remove black covers from the studs on the front panel.



3. Slide Loader over Film Entry Guide. Press the Loader firmly against machine. Secure loader with black knob screwed onto the Stud now positioned inside the Loader.

Open the chemical module compartment by lifting the module compartment lid and sliding the left-hand side panel upwards.

4.

Ensure the machine is disconnected from the mains. Then Slide the tanks out of the machine.

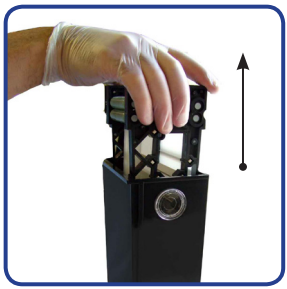
5.

WARNING: *Hot parts exposed when removing tanks*

Secure loader with the two retaining screws that were unscrewed earlier. Remove the protective film from the red viewing hatch.

6.

Filling the Chemical Modules



7. Tanks are now free to be taken to a clean working surface for filling. The transport modules should now be lifted from their respective tanks and the separating sheets removed from between the output rollers.

8. Fill each tank with the appropriate chemical, pouring in 1 (one) litre of fluid at this stage. Pour in accordance with the marking on the tanks, i.e. Developer always in the Developer tank and Fixer in the Fix tank.

9. Carefully lower each transport module into its respective tank

WARNING: *rapid immersion will cause excessive displacement of chemical that could lead to spillage. Should any spillage occur it should be cleaned up immediately.*

10. Lightly lubricate the rod heating elements with the silicone grease provided. (Replacement tube Pt. No. I/FIT5041F) Use at first time of operation and after every tank removal.

11.

The level of the liquids should now be adjusted: - top up to within 25mm, (1inch), from top of the tank, (shown as half way in the tank viewing window). This level should be checked every day and topped up as necessary.

***Tip**: When returning the transport modules to their tanks, ensure that they are correctly positioned, i.e. with the drive pins inwards so that they engage correctly with the drive dogs on the inside wall of the tank area.*

12.

Return tanks to their individual positions in the machine (clearly marked). Fixer first, Developer second. Push the tanks carefully home until they touch the rear wall of the tank area, ensuring that each drive pin engages its drive dog.

***Tip**: Use the turning tool provided to turn the drive pin, if necessary.*

13.

The detachable wash tank should now be filled with water to the “level” line and hung at the back of the machine.

Processor Operation

1. Each day, before use, check levels of Developer and Fixer and top up where appropriate.

2. Each day, before use, renew the water in the wash tank.

3. Plug the electrical power lead into the socket at the rear of the processor. When ready to switch on the machine, connect the plug to the mains wall socket and switch on.

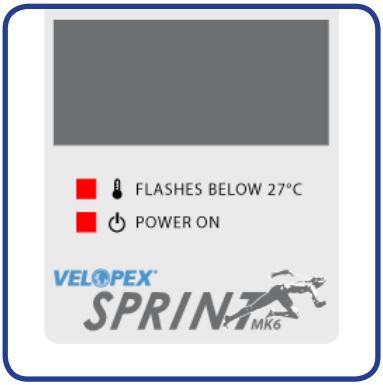
(Daylight loader not shown)

4. Before processing run through a 'clean-up' film. For clean-up films use a spare intra-oral film. After a week discard the old film and use a fresh one. This routine helps to clean the transport system and checks that the transport mechanism is running properly.
Touch the Film entry guide to initiate the machine.

The unit will now process your film, note that it automatically adjusts its speed to the temperature of the chemical. If the chemical is cold the films will take longer to process, the indicator light flashes indicating that its temperature is below optimum speed which is achieved at 27°C when the processing cycle will be approximately 2 minutes.

5.

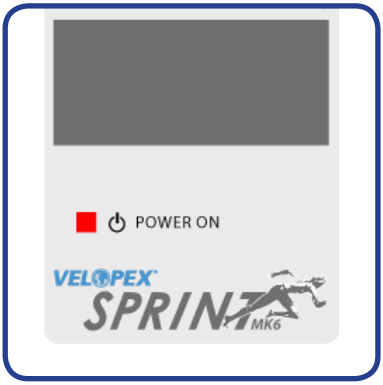
MK6



The unit will automatically adjust its speed to the temperature of the chemical. If the chemical is cold (min. 12°C) the films will take longer to process.

5.

MK6-E



At the end of the day disconnect the machine from the mains supply.

6.

***WARNING**: Turning off electrically at the end of each workday is an essential safety procedure.*

***Tip**: Position the machine to allow easy disconnection from electrical supply.*

Maintaining the Velopex Sprint

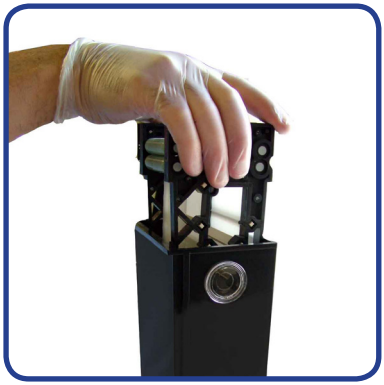
1. Switch off the processor and disconnect it from the mains power supply.

***Tip**: Regularly clean your processor, to maintain consistently good results and increase the life of your chemistry.*

2. Use a damp cloth only and wipe the external surfaces, exercising extreme care around the electrical connection. Remove old film wrappers from daylight loader. Wipe clean the interior of loader.

***Tip**: The interior of the daylight loader should be cleaned with cold sterilising solution. Wipe dry after appropriate period.*

***WARNING**: Wear gloves - contamination Biohazard.*



3. Remove transport modules and place in a sink with running water and a drain. Rinse under the running water. Do not allow chemicals to dry on the belts before cleaning.

***Tip**: The modules will be wet with chemicals - take care to allow them to drain a little over the tanks before moving them.*

Rinse and fill the tanks with fresh cold water. Add one cleaning tablet and leave for one hour.

4.

After one hour, empty tanks and then rinse the tanks with cold water. Wipe dry, inside and out, before refilling.

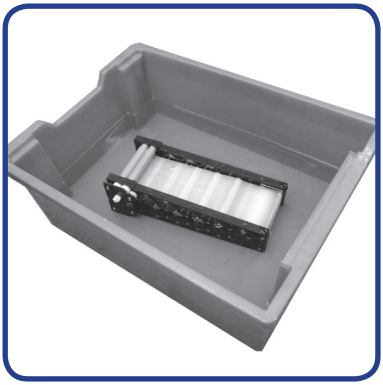
Rinse the transport modules thoroughly with cold water and lightly scrub gears and rollers.

5.

***Tip**: Use the turning tool; turn the gears and belts by hand to assist in thorough cleaning.*

Place the module in a washing-up bowl with fresh, cold water. Add three tablets to each bowl and leave to soak overnight.

6.



***WARNING**: DO NOT MIX MODULES DURING CLEANING. Ensure that the correct module goes into its corresponding tank.*

Maintaining the Velopex Sprint (cont.)

7. After cleaning, pour 1 litre (1¼ pints) of fresh chemical into the correct tanks and replace the modules into their respective tanks. Top up the chemicals to within 25mm (1 inch) of the top of the tanks. Renew the silicone grease on the heating elements. Replace the tanks in the processor, fixer first, followed by the developer.

8. Be sure to keep a note of the date when chemicals are changed, using the chart provided.

***Tip**: Spend time cleaning the machine, as you will be amply rewarded by high quality results and extended chemical and machine life.*

***WARNING**: Processing chemicals should be handled with care. If spilt they may cause staining or corrosion of surfaces. They can also cause skin or eye irritation - wipe up any drips or spillage immediately. If chemicals are splashed onto the skin or eyes, flush immediately with abundant amounts of plain water. Always observe the chemical manufacturer's recommendation for this situation. Problems of this nature can be avoided by wearing protective glasses and gloves.*

Trouble Shooting

Symptom: ***Machine does not operate.***

Action:

1. Check that Mains Power is plugged in and the supply is switched on.
2. Check that cord is fully engaged in both mains power supply and socket at the rear of the machine.
3. Switch off Mains Power supply and unplug the machine and call for Service.

Symptom: ***Audible Bleep and Heater Indicator Light Permanently Off (MK6 Model)***

Action:

1. Check the lid is on and switch the machine off then back on.
2. Constant audible bleep- the machine has detected a function out of limits. Call for Service.

Note: After 30 minutes the audible bleep will stop but the Heater Indicator Light will remain off. (MK6 Model)

Symptom: ***Chemical(s) overheating.***

Action: Switch off Mains Power supply and unplug the machine and call for Service.

Symptom: ***Films will not enter through Film Entry Guide.***

Action: Open machine Module Cover and check correct engagement of transport modules.

Symptom: ***Film Lost in the Machine.***

Action:

1. Check that the transport modules are correctly located in their drive dogs and running correctly. If not, re-locate.
2. Check the spring tensioning of the modules and check for correct positioning. Use the module turning tool to rotate the belts for inspection, and run a test film through the module using this tool.
3. Check that transport modules have been put through the correct cleaning procedure.
4. Should there be any damage to the belts, such as tearing or twisting, order a replacement module.

Trouble Shooting (cont.)

Symptom: ***Films too dark or fogged.***

Action:

1. Test for light fogging by feeding an unexposed film through the machine. It should process as a transparent piece of film base with no signs of shadows or blackness evident.
2. If there is light fogging, proceed as follows:-
   a) Check that the daylight loader cover is firmly in place.
   b) Check very closely for other possible light leaks: ensure that the machine has not been sited in direct sunlight or in intense lighting conditions (e.g. directly under strip lights or spotlights). Do not take your hands out of the daylight loader before the film has fed completely into the machine. (Fog at one end only of the film indicates premature removal of hands from daylight loader).
   Check hand entry ports to ensure there is a good light seal around the wrists -if not, call for service.
   c) Check whether films have been stored too close to x-ray source, and re-locate.
   d) Check expiry date on film box to ensure films are not out of date. (Keep films in a cool, dry place: excessive heat can cause premature ageing of film).
3. Check that there has been no chemical mix-up, leading to cross-contamination.
4. (MK6 Model) Check temperature of developer and fixer tanks. This is generally set at 27°C (81 °F). A substantial difference could lead to dark film. Switch off the machine and call for service.

Symptom: ***Films too light.***

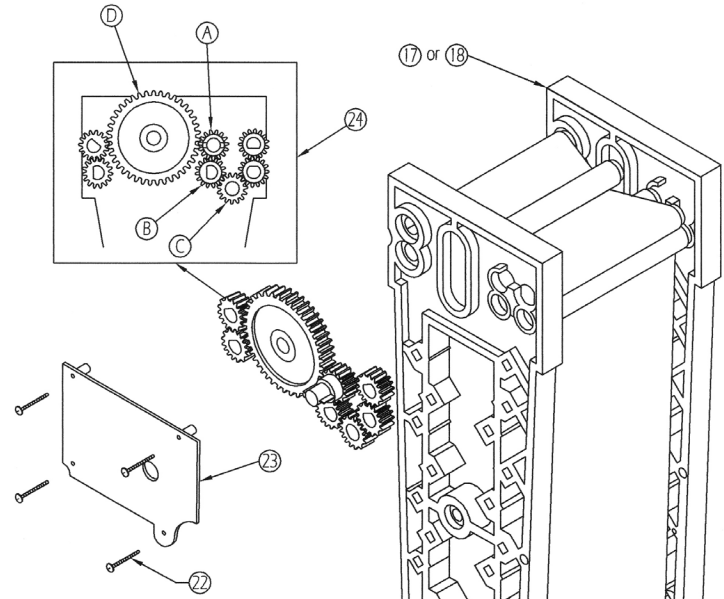
Action:

1. Check chemicals as follows:
   a) Chemicals exhausted - replace with fresh.
   b) Chemicals contaminated - clean machine, replace chemicals with fresh solutions.
   c) Chemical level in tanks too low - top up.
   d) (MK6 Model) Temperature of chemical(s) too low, (check with a thermometer) - below 27°C (81 °F) - call for service.
2. Check films have been exposed correctly.

Symptom: ***Films dirty or marked.***

Action:

1. Check water. Clean tank thoroughly and change water.
2. Check transport modules are being cleaned correctly (see cleaning instructions).
3. Check chemical level in both tanks and top up as required.
4. Check modules for correct positioning. When found in incorrect order, contamination will have occurred. Thoroughly wash and replace with fresh chemicals.
5. Check for stray light entering machine - proceed as for fogging (see above).



Ⓐ Main drive gear
Ⓑ 'D' shaped centre gears (Total 5)
Ⓒ Small idler round hole gear (Total 1)
Ⓓ Large idler gear
⑰ Developer Module
⑱ Fixer Module
㉒ Retaining screw (Total 4)
㉓ Gear cover plate
㉔ Gear set (Complete)

Spare Parts / Consumables

Spare Parts

Item No.	*Description*	*Part No.*
12	Wash Tank Assembly	*I/ASS7713F*
13	Developer Tank	*I/ASS2176F*
14	Fixer Tank	*I/ASS2177F*
16	Developer Module	*I/MOD0067F*
17	Fixer Module	*I/MOD0068F*
see p.21	Module Gear Replacement Set	*I/MOD0100F*

Consumables

Quality Control
System Cleaner Tablets
(Pack of 36)
I/TAB0002F

Chemistry
Developer - Ready-To-Use
(2x5ltr) C/DER3001F
Fixer - Ready-To-Use
(2x5ltr) C/FIR5001F

Film
Velopex Intra-Oral
E Speed
(Pack of 150)
I/FLM7001F

Medivance Instruments Ltd.
Barretts Green Road
Harlesden
London NW10 7AP
United Kingdom
Tel: +44 (0)20 8965 2913
Fax: +44 (0)20 8963 1270
www.velopex.com

Velopex International
14 route de Montreuil le Gast
B.P. 82214, Melesse
35522 La Mézière
France
Tel: +33 (0) 2.99.13.22.59
Fax: +33 (0) 2.99.13.22.60
www.velopex.fr

Velopex International Inc.
105 East 17th Street
St Cloud
Florida, 34769
United States of America
Tel: +1 (407) 957 3900
Fax: +1 (407) 957 3927
www.velopexusa.com

CE

Hi-Tech
Diagnostics
Service

VELOPEX INTERNATIONAL

MAKERS OF DENTAL, VETERINARY AND MEDICAL EQUIPMENT

www.velopex.com